

# Radiologic Case

## Right Hilar Mass

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Series' Editor

A 61-year-old man was admitted to the hospital with a history of shortness of breath for 2 weeks. He had smoked one pack of cigarettes per day for more than 40 years, but had stopped smoking during the week before admission because of cough and shortness of breath.

On physical examination, he was thin, but appeared to be in good health. Posteroanterior and lateral chest x-ray films were taken (Figures 1 and 2). What is the differential diagnosis, and what is the most likely possibility? What imaging test would provide the most information about the process?

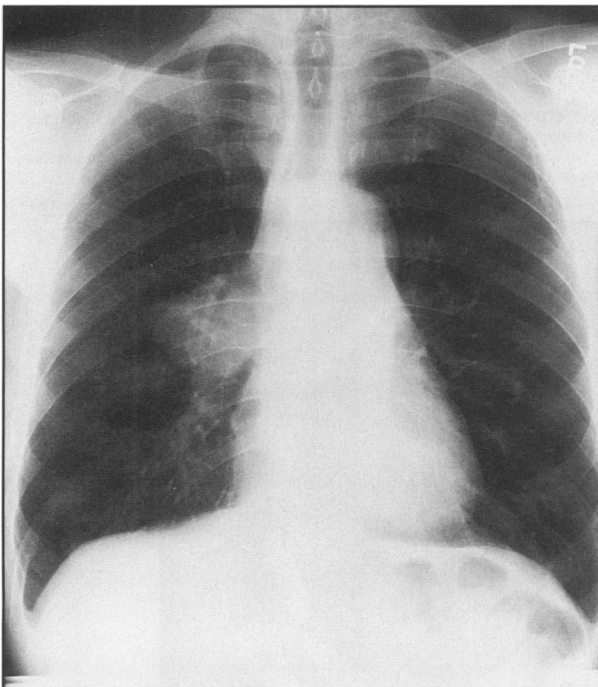
What is the most likely diagnosis in this patient?

How would you confirm the diagnosis?

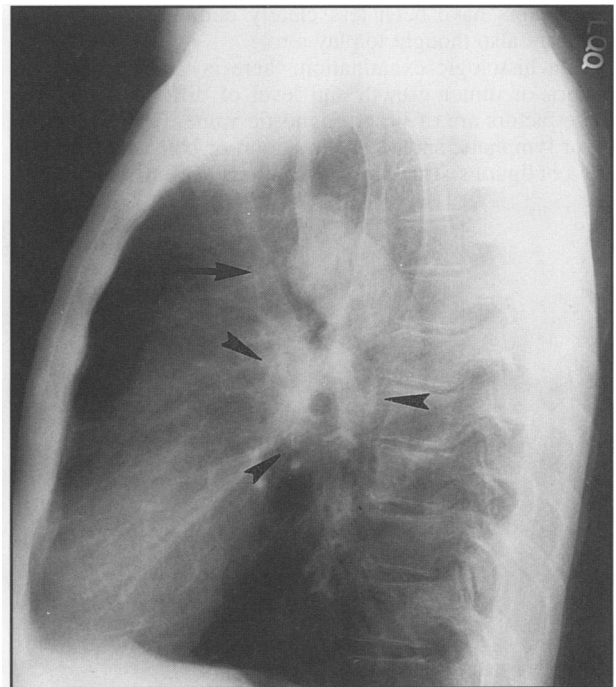
What other test would you do?

How would you treat this patient?

SEE FOLLOWING PAGE FOR DIAGNOSIS AND DISCUSSION



**Figure 1.**—A posteroanterior chest x-ray film shows an obvious right hilar mass.



**Figure 2.**—A lateral chest x-ray film shows the right hilar mass (arrow heads). A second, mediastinal mass can be seen indenting the posterior wall of the trachea (arrow).

(Berlin WO, Levy H, Mapel DW, Manley J: Right hilar mass. West J Med 1995; 162:71-72)

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## ANSWER: Squamous cell carcinoma of the esophagus with hilar metastasis

COMPARISON OF THE POSTERIOR and lateral chest films shows that the obvious right hilar mass is superimposed on the bronchus on the lateral film (Figure 2). There is another mass above the hilum, which can be seen impinging on the posterior wall of the trachea. These findings could be due to primary lung carcinoma with metastasis, nonthoracic malignancy with metastasis to both the hilum and mediastinum, or to a primary mediastinal lesion with spread to the lung.

The computed tomographic (CT) scan (Figure 3) shows a circumferential mass involving the esophagus and extending into the posterior wall of the trachea. Scans at other levels showed the right hilar mass. No pulmonary mass was present. While pulmonary carcinomas and metastases from other organs often involve mediastinal nodes, a circumferential mass around the esophagus strongly suggests that this is the origin of the malignancy. The CT findings led to endoscopic examination and biopsy, which confirmed the diagnosis.

Malignant esophageal neoplasms constitute 7% of gastrointestinal tumors. Squamous cell carcinoma is the most frequent neoplasm of the esophagus and represents 90% of all esophageal cancers. This lesion has been linked to conditions causing injury to the esophageal mucosa, particularly smoking and ethanol intake. Other environmental risk factors have been less clearly defined, but some of these are also thought to play a role.

On histologic examination, there is variability of the pattern of tumor growth and level of differentiation, but these factors are of little prognostic value. Direct invasion by or lymphatic spread of the tumor, or both, may involve any contiguous structure. As much as 40% of esophageal

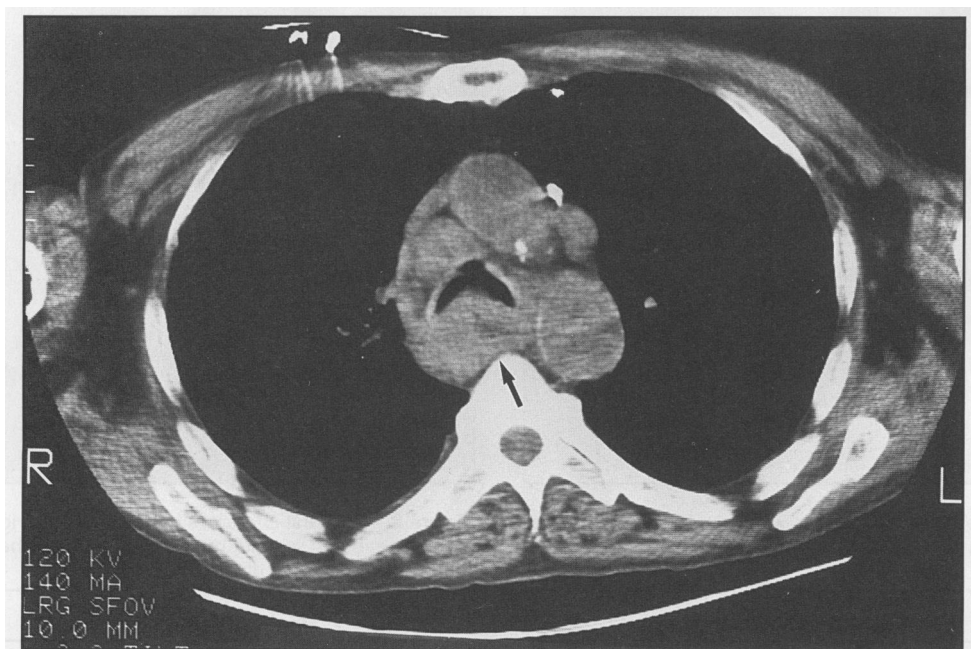
neoplasms arise in the middle third of the esophagus, and lymphatic spread of the tumor from this region is predominantly to the mediastinum. The tumor will then present as hilar adenopathy or mediastinal mass, as in this patient.

Presenting symptoms, although most often indicative of esophageal disease and systemic illness, may include respiratory symptoms of cough due to bronchial irritation, hoarseness with recurrent laryngeal nerve involvement, pneumonia from aspiration or bronchial obstruction, hemoptysis, lung mass, or aspiration due to tracheobronchial fistula. A careful history should be taken for the presence of esophageal disease in patients with these symptoms.

Computed tomography and magnetic resonance imaging are both useful tools in the evaluation of mediastinal masses. They provide information about metastasis, extrapulmonary extension, staging, and resectability. Bronchoscopy is necessary to evaluate pulmonary involvement. Percutaneous biopsy can be accomplished with CT guidance in lesions not amenable to endoscopic or fluoroscopic biopsy. In this patient, demonstration of the tracheal involvement documented the unresectability of the tumor and directed therapy toward palliation. The prognosis is poor in all patients with esophageal carcinoma. Even patients with limited disease who are subjected to aggressive treatment have five-year survival rates of 4% or less.

### REFERENCES

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**Figure 3.**—A computed tomographic scan at the level of the mediastinal mass shows circumferential involvement of the esophagus (arrow) and protrusion into the posterior wall of the trachea.